

## 21. Chico Creek Watershed

### 21.1. Introduction and Overview

Chico Creek Watershed is about 736 square miles and is located in the southeastern portion of El Paso County and the northeastern portion of Pueblo County, immediately east of the Fountain Creek Watershed. The two main subwatersheds within the Chico Creek Watershed are Upper Black Squirrel and Chico Creek. Within the Upper Black Squirrel Sub-watershed, there are many existing districts, developed areas, and a number of major urban developments that were approved at the conceptual stage. Chico Creek Subwatershed consists of large farms and has several unique ecosystems. Both of these areas are included in the South Central Comprehensive Plan, which is a small area element of the El Paso County Master Plan.

### 21.2. Land Use

The Upper Black Squirrel Subwatershed is primarily a rural area that consists of existing and proposed small clusters of single-family homes, and between these clusters it is primarily rural in nature. The established subdivision and development patterns are expected to remain the same except for the possible redevelopment of certain parcels with lower density uses, especially next to major intersections. Major growth is also limited to areas where services, including roads, can be provided.

The primary land use in the Chico Creek Subwatershed is agriculture/farming followed by residential. The Colorado State Land Board is the largest single landowner in the Chico Creek Subwatershed. The Land Board owns about 215,000 acres of land (about half of the total watershed area) in the Chico Creek Basin and 260,000 acres of mineral rights. Since 1994, the Land Board has:

- Acquired 75,000 acres of shortgrass and sand sage prairie;
- Designated 90,000 acres in the Stewardship Trust; and
- Issued two 25-year leases for ranches (Chico Basin, Bohart, and Frost Ranches) encompassing over 20,000 acres that encourage educational and conservation efforts.

The major goal of these acquisitions was to assemble large contiguous properties that could be managed more effectively than the 640-acre sections of trust lands typically found on the eastern plains. The two largest contiguous parcels which the Land Board owns are the Chico Basin and Bohart Ranches.

### **21.3. Population and Socioeconomic Characteristics**

Growth of the Colorado Springs Metropolitan Area is causing a trend towards rural expansion into both subwatersheds. Existing and proposed development in the Upper Black Squirrel Subwatershed includes the Ellicott Springs/Sunset Village area, Ellicott School, Woodmen Hills, Meridian Ranch, Viewpoint Village, Springs East, Paint Brush Hills, Falcon Highlands, Falcon Hills, and other subdivisions in the Falcon area. El Paso County Planning and Community Development is coordinating future planning along the Highway 94 corridor.

Within the watershed, along eastern and southern portions of the county not owned by the state, there's a trend towards 35-acre developments. This is important since parcels of 35 acres or greater are exempt from local subdivision control and do not have specific regulations, requirements, and fees. This includes requirements to demonstrate a 300-year water supply, to have road access and appropriate building sites, and to pay fees toward school and parkland, drainage, and possibly traffic impacts.

In the Falcon/Peyton planning area, "In 1992, about 31% of the land area was made up of parcels over 640 acres, and now that size parcel makes up only about 22% of the area. In contrast, parcels smaller than five acres made up only about 3% of the planning area in 1992, while now these parcels occupy almost 10% of the planning area. Perhaps most telling, the number of parcels under five acres in size increased by 551%. This clearly points to a trend of subdivision and urbanization." (El Paso County, 2008, p 2-48)

### **21.4. Characterization of Watershed Issues**

#### **21.4.1. Upper Black Squirrel Subwatershed**

The primary watershed issues are associated with the trend toward urbanization or suburban development and related issues, especially in the northern portion of the Upper Black Squirrel Subwatershed. This trend, when coupled with lack of regulatory control on lots of 35 acres or greater, problems associated with water quality, erosion, and sedimentation can have a compounding effect on water quality. Groundwater quality could be impacted from an increased reliance on onsite wastewater systems instead of centralized wastewater treatment. Many of the homes and communities in this area rely on groundwater, and depletion of groundwater resources could threaten the biodiversity and availability of water in the area. An adequate supply of groundwater is critical to a healthy and sustainable system.

#### 21.4.2. Chico Creek Subwatershed

In the Chico Creek Subwatershed, overgrazing and grazing along streams/creeks is an issue, although several of the ranches in this area are taking proactive steps to minimize possible impacts. Ranches in this area have developed a community-based conservation and direct marketing network that supports a diverse enterprise mix of traditional and nontraditional ranch products. Examples of this can be found at [www.chicobasinranch.com](http://www.chicobasinranch.com).

An assessment by the Chico Basin Conservation Leadership Initiative (2002) revealed a high-quality and biologically diverse arid landscape, intrinsically valuable with a historic agricultural economy. The study concluded the area was:

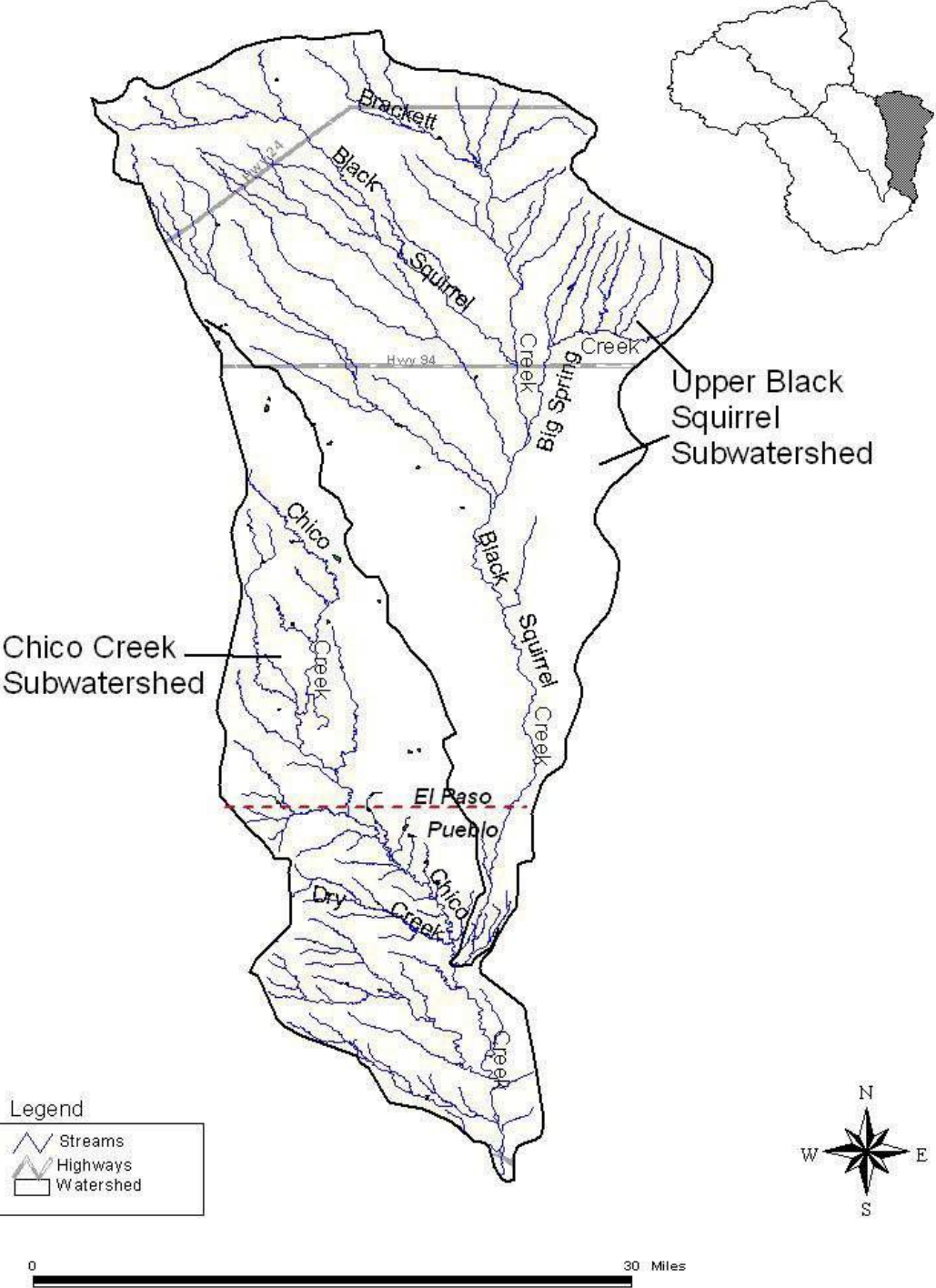
- Threatened by fragmentation, economics of development, lack of vision and action, and loss of water due to increased diversions and growth-related use; and
- Alternatives to development are needed to increase value of land due to residential growth, fragmentation, and increasing demands on finite water supplies.

#### 21.5. Overview of Watershed Activities

- Activities completed in the watershed are listed below:
- Chico Basin Conservation Leadership Initiative is meeting under the organization of the Nature Conservancy. This leadership initiative was a follow-up from the Chico Basin Symposium held in February 2002 to discuss issues ranging from “The Ecological Importance of the Chico Basin” to “Economics of Ranching in the Chico Basin.” Some goals of this group were to identify and engage local leadership in conservation issues.
- Highway 94 Master Plan—This plan was developed in 2003 (El Paso County) and is used as a guide for future county actions concerning land development requests along Highway 94.
- Falcon/Peyton Small Area Master Plan (El Paso County, August 2008).
- El Paso County Strategic Plan (December 2017)

- El Paso County Land Development Code is frequently updated

21.6. Figure: Chico Creek Watershed Reference Map



## 21.7. Watershed Water Quality Analysis

### 21.7.1. Standards and Classifications

Within the Chico Creek Watershed, there are only two stream segments - COARMA04c and COARMA04f:

### 21.8. Table: Water Quality Stream Segments

	Stream Segment Description	Classifications	Physical & Biological	Inorganic (mg/l)		Metals (ug/l)
4c.	Mainstem of Chico Creek, including all tributaries, wetlands, lakes, and reservoirs, from the source to the confluence with the Arkansas River	Aq Life Warm 1 Recreation E Agriculture	D.O. = 5.0 mg/l pH = 6.5- 9.0 E. coli = 126/100ml	NH3(ac/ch) =TVS CL2(ac)=0.019 CL2(ch)=0.011	CN=0.005 S=0.002 B= 0.75 NO2= 0.05	As(ac) = 340; As(ch )= 7.6 (Trec); Cd(ac/ch) = TVS; CrIII(ac/ch) = 100(Trec); CrVI(ac/ch) = TVS; Cu(ac/ch) = TVS; Fe(ch) = 1000 (trec); Pb(ac/ch) = TVS; Mn(ac/ch) = TVS; Hg(ch) = 0.01(tot); Ni(ac/ch) = TVS; Se(ac/ch) = TVS; Ag(ac/ch) = TVS; Zn(ac/ch) = TVS
4f.	Mainstem of Black Squirrel Creek, including all tributaries and wetlands, from just below Highway 94 to Squirrel Creek Road,	Aq Life Warm 2 Recreation P Agriculture	D.O. = 5.0 mg/l pH = 6.5- 9.0 E.Coli= 205/100ml Temperature WS-III Chlorophyl a (mg/m2) 150		CN=0.2 B= 0.75 NO3=100 NO2=10 P=0.17	As(ch)=100(T); Be(ch)=100(T); Cd(ch)=10(T); CrIII(ch)=100(T); CrVI(ch)=100(T); Cu(ch)=200(T); Pb(ch)=100(T); Mn(ch)=200(T); Mo(ch)=150(T); Ni(ch)=200(T); Se(ch)=20(T); Zn(ch)=2000(T) Uranium varies

Temporary modification (type iii): NH3(ac/ch) = Existing Quality Expiration date: 12/31/2011. Since December 2006, PBHMD has been conducting a use attainability analysis (UAA) of Middle Arkansas Segment 4c, also identified as segment COARMA04c. Preliminary UAA data analysis results indicate the current segmentation, classification, and water quality standards may not be accurately representative of actual site-specific conditions.

## 21.9. Surface Water

Within the Chico Creek Watershed there are two main creeks: Black Squirrel Creek, and Chico Creek.

Black Squirrel Creek originates in Black Forest in northern El Paso County and drains into Chico Creek in Pueblo County. Chico Creek then flows into the Arkansas River in Pueblo County. The upper and middle portions of Black Squirrel Creek and Chico Creek are ephemeral streams that flow only in response to thunderstorms, snowmelt, and prolonged rainfall. There is perennial flow only along the lower portions of Black Squirrel Creek and Chico Creek.

Fishery data collected by the Colorado Department of Parks and Wildlife between 1993–1998 along the lower portions of Black Squirrel Creek and Chico Creek indicate the presence of the Arkansas Darter (state endangered fish). Nine fish species were also present in this drainage, but not all were found at each site; seven of these species are native to the Arkansas River basin. The fish species were not equally abundant at all the monitoring sites. This monitoring data indicate this section is not impaired and the fish community is abundant, diverse, and relatively stable.

### 21.9.1. Monitoring

Because most of the stream segments in the Chico Creek Watershed are ephemeral, there are currently no monitoring stations located in the watershed. Water quality monitoring data is therefore extremely limited. Future studies should investigate the possibility of a monitoring station on Chico Creek, immediately above the confluence with the Arkansas River.

## 21.10. Regulatory listing

There are no segments within the Chico Creek watershed on the 303(d) list or the 303(d) Monitoring & Evaluation list.

## 21.11. Groundwater

Groundwater accessed through individual wells is the primary source of drinking water for residents living in this watershed and to the east of this watershed. Because of the limits of surface water in this region (lack of year-round surface water or reservoirs), groundwater also plays a critical role in determining the type and magnitude of future growth and development. The primary concern is groundwater in the Upper Black Squirrel alluvial aquifer, which underlays most of the Chico Creek Watershed.

## Denver Basin Aquifers

The Denver bedrock aquifers discussed in section 8.2.4 are the primary sources of groundwater. Because of the nature of the strata (the confining units between the saturated beds), the Denver Basin aquifers are not considered to be a long-range, renewable source of water (El Paso County, 2008). An overview of the characteristics is provided in Table 21.12.

21.12. Table: Denver Basin General Aquifer Characteristics

Aquifer Name	Aquifer Top	Aquifer Thickness	Depletion Speed <sup>1</sup>	Water Treatment <sup>2</sup>
Dawson	Land Surface	0–450 feet	High	Normally none
Denver	0–660 feet	350–900 feet	High to Moderate	Rare
Arapahoe	380–1530 feet	500–600 feet	Mod to Low	Usually
Fox Hills	1200–2300 feet	200–340 feet	Low	Sometimes

<sup>1</sup> Determined by the amount of pumping past and present and with future projections

<sup>2</sup> In most cases, the amount of iron and manganese determines the need for treatment.

### Upper Black Squirrel Alluvial Aquifer

The Upper Black Squirrel Creek alluvial aquifer underlies about 350 square miles of the Upper Black Squirrel Creek Subwatershed. This aquifer is located about 25 miles east of Colorado Springs and supplies water for domestic, agriculture, and municipal uses. The Water Quality Control Commission has assigned use classifications and water quality standards to this aquifer (CDPHE-WQCC, 2009) as shown below:

- Specified Area: All unconfined groundwaters within the saturated zone underlying specified area of El Paso County.
- Classification: The classifications of the unconfined ground water in the specified area are: 1) Domestic Use-Quality; and 2) Agricultural Use-Quality.
- Ground Water Quality Standards
- 1-4 of the *Basic Standards for Ground Water* (CDPHE-WQCC, 2009) are assigned to all unconfined groundwater in the specified area.

The Colorado Groundwater Commission administers water withdrawals from this aquifer, and



the Upper Black Squirrel Creek Groundwater Management District that was established in 1968 by the Colorado Groundwater Commission who reviews water rights applications and information concerning withdrawals for this basin. This district is authorized to adopt additional rules and regulations to help administer groundwater within their district. The boundaries of the District and the aquifer are the same.

The aquifer supplies most of the water for irrigation and domestic use in the basin, and since 1964, it supplies water for export to the Colorado Springs area. This alluvial aquifer is also used as a drinking water source for Cherokee Metropolitan District. Water exported by Cherokee from this aquifer is considered transbasin water and is available under the Colorado Water Law to be used to extinction. Cherokee completed construction and commenced operation of a new WRF for recharging the aquifer in a manner augments available groundwater resources. The treatment plant began operations in July 2010.

#### *Colorado Geological Survey Studies*

In January 2012, the U.S. Geological Survey, in cooperation with the Pikes Peak Area Council of Governments, Colorado Department of Public Health and the Environment, Colorado Springs Engineering, and Colorado Springs Utilities, published “Evaluation of Fecal Contamination by Human and Ruminant Sources in Upper Fountain Creek, Colorado, 2007–2008, By Using Multiple Lines of Evidence”. The study was conducted to document the locations, magnitude, and sources of fecal contamination to upper Fountain Creek. The objective of this study was to identify major sources of *E. coli* in upper Fountain Creek during exceedances of the State recreational water standard. To meet this objective, a new approach was developed and tested that uses genetic marker analysis for microbial source tracking, along with other information, to evaluate potential contributions of fecal contamination from various sources. The full report can be found at: <https://pubs.usgs.gov/fs/2011/3095/>

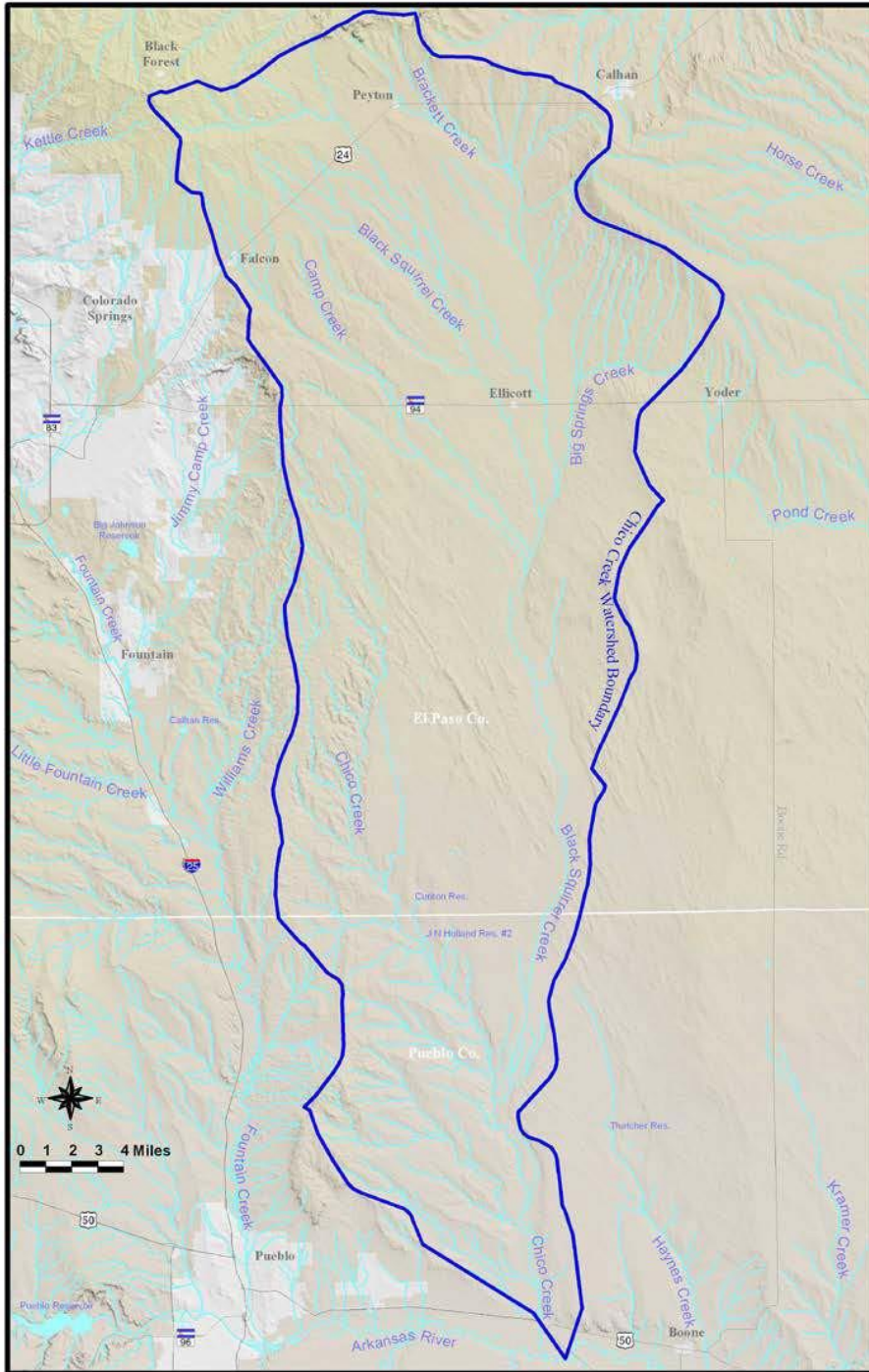
Highlights from this report include:

- The initial *E. coli* survey at 16 sites in 2007, identified the location where Ruxton Creek enters Fountain Creek as a pivotal point in the watershed. At this location, Fountain Creek often changed from achieving to failing to achieve Colorado’s standard for in-stream *E. coli* density. Ruxton Creek accounted for some, but not all, of the fecal contamination at this point.

- During the cool season (September 16 through June 14), MST marker analysis did not exclude any of the evaluated animals (human, ruminant, pet, bird, other nonruminants) as potential sources of fecal contamination. However, because the levels of *E. coli* were generally below the standard during these months, the presence of fecal contamination from any of these sources did not exceed regulations. However, during warm season, MST marker analysis indicated humans, ruminants, and pets (cats and dogs) were not the source of excessive *E. coli* (relative to the standard). Birds were the only evaluated source that could have contributed this much *E. coli* without being detected by MST genetic markers.
- The general lack of wastewater associated chemicals in the water samples during the warm season supported the finding that humans or ruminants were not the primary cause of fecal contamination to upper Fountain Creek. The indication that birds were a probable source of *E. coli* contamination during warm season was supported by the data collected. In water samples collected during the warm season and in bird-feces samples, high concentrations of *E. coli* were present but the general-feces MST marker concentration was low relative to other potential fecal sources and human and ruminant-associated markers were absent.

In September 2017, the U.S. Geological Survey, in cooperation with Colorado Springs City Engineering published “Characterization of water quality and suspended sediment during cold-season flows, warm-season flows, and stormflows in the Fountain and Monument Creek watersheds, Colorado, 2007–2015”. The study was conducted in the Fountain and Monument Creek watersheds to characterize surface-water quality and suspended-sediment conditions for three different streamflow regimes with an emphasis on characterizing water quality during storm runoff. Data collected during this study were used to evaluate the effects of stormflows and wastewater-treatment effluent discharge on Fountain and Monument Creeks. The full report can be found at: <https://pubs.usgs.gov/sir/2017/5084/sir20175084.pdf>

21.13. Figure: Chico Creek Watershed Stream Locations



## 21.14. Point Source Dischargers

### 21.15. Overview

The Chico Creek Watershed is divided into two main subwatersheds, Upper Black Squirrel and Chico Creek. There are many development projects in Upper Black Squirrel Subwatershed that are either recently completed, in the initial planning stages, or delayed due to the slowdown in economic activities and housing. Water rights issues and the ability to provide water service to these districts have and will continue to play a critical role in these developments.

In July 2010, the Cherokee Metropolitan District has completed and began operation of a new Water Reclamation Facility to relocate their wastewater operations into this subwatershed.

All wastewater treatment facilities are located in the Upper Black Squirrel Subwatershed and there are currently no permitted facilities in the Chico Creek Subwatershed. No industrial discharge facilities are located in either of these subwatersheds.

There are also two wastewater treatment facilities located in El Paso County, but outside of the Upper Black Squirrel Subwatershed:

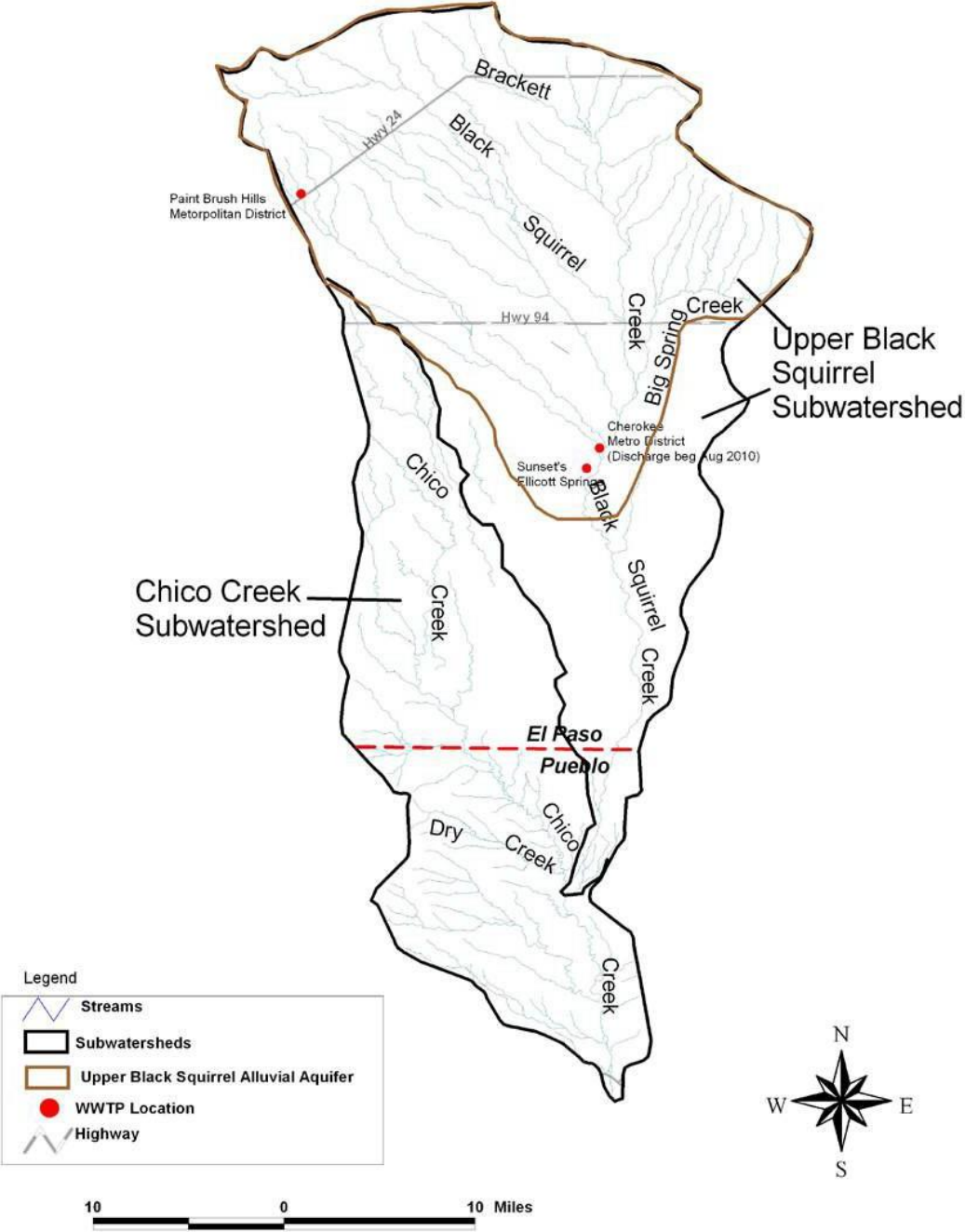
- Town of Calhan is located northeast of the Watershed along Highway 24
- Walden Corporation is located northwest of the Watershed.

### 21.16. Table: Chico Creek Watershed Major Point Source Discharge Facilities

Wastewater Treatment Plant	Permit No.	Discharge Location	Proposed Mgmt. Area	Design Capacity (mgd)	Existing Load (mgd)	Permit Expiration Date
Woodmen Hills Metropolitan Dist. RWRF	CO-0047091	Unnamed tributary of Black Squirrel Creek, east of treatment plant (Water Reclamation Facility and rapid infiltration basins)	Upper Black Squirrel	1.3	0.775	Expired in December 2019. Operating under administrative extension until the new permit is issued.

Cherokee Metropolitan District	COX048348	Discharge to groundwater (ten recharge basins were constructed at the site)	Upper Black Squirrel	4.8	1.8	Renewed in July 2015. Expires July 31, 2023
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21.17. Figure: Chico Creek Watershed Point Source Discharger Facilities



## 21.18. Highway 94 Comprehensive Plan

El Paso County completed the last update of the Highway 94 Comprehensive Plan, which was originally adopted by the El Paso County Planning Commission in 1985 and updated in July 2003. The planning area includes approximately 120 square miles–100 square miles centered around Schriever Air Force Base, and another 20 square miles centered around the Colorado Centre area. This small area plan element is used as a guide for future Board of County Commissioners' actions concerning land development requests. This document acknowledges wastewater treatment as a significant planning parameter affecting the area. The plan acknowledges pressures for urban density development along State Highway 94 and also recognizes the substantial up-front costs associated with constructing new wastewater treatment plants for such developments.

The Highway 94 Plan addresses the issue by acknowledging possible development scenarios, which include:

- Connections to the Sunset Village Treatment Plant (Ellicott Springs Resources LLC), southeast of the planning area, and possible enlargement of the facility.
- Connections to the Cherokee Metropolitan District Water Reclamation Facility
- Use of a “package plant” as a start-up option, although a package plant would face substantial regulatory barriers.
- Siting and construction of a new sewage treatment plant in the planning area in the same vicinity as the Sunset Plant (Ellicott Springs Resources LLC).

## 21.19. Future Needs Assessment

The future needs assessment described in this section is based on proposed growth and development expected to occur in the Upper Black Squirrel Subwatershed and what effects this will have on wastewater treatment plant service needs. Growth pressure has become significant within the basin. The Woodmen Hills, Meridian Ranch, Falcon Highlands, Paint Brush Hills, and other areas have experienced significant development since the 2010 update of the 208 Plan, including both residential and commercial activities. Several factors will be critical in determining future needs for this area. These factors include:

- Water resource availability: Future development must demonstrate a reliable source of water.
- Cost: Development of services should consider the most cost-effective manner possible.
- Environmental constraints and water quality: Possible environmental constraints and ability to treat effluent according to CDPS and NPDES permit standards.

### **21.19.1. Cherokee Metropolitan District**

#### *Water Reclamation Facility (WRF)*

The Cherokee Metropolitan District currently owns and operates a publicly-owned wastewater treatment plant located at the northeast corner of the intersection of Milne and Drennan Roads within the Upper Black Squirrel subwatershed. A headworks facility was constructed at the old sand creek facility.

Two lift stations operating in series transmit the flow from that location through the district's existing 14-inch force main eastward. The remaining cells at the existing complex were cleaned of biosolids and held in reserve for emergency storage in the event any issues arise within the interconnecting force main, interceptor sewer, or lift stations associated with the conveyance facilities from the district's old treatment plant site to the new facility site.

The new plant is programmed to treat all wastewater generated within the Cherokee Metropolitan District's service area, including its contract user, the SAFB. Cherokee also has an intergovernmental agreement (IGA) with the Meridian Service Metropolitan District (MSMD). MSMD can enter into an IGA with other districts to share capacity. A 16-inch diameter, 6.5-mile-long pipeline was constructed by MSMD extending from the Falcon area interconnecting to Cherokee's existing pipeline that currently services the SAFB. This main will be used to convey MSMD's and their contract user's wastewater to Cherokee. The needs of the Cherokee Metropolitan District's primary service area are projected to total 2.6 mgd together with a projected loading from Meridian Ranch and their contract users of 2.2 mgd. The capacity of the new facility will be 4.8 mgd.

The district's new WRF will discharge to a 20-inch-diameter pipeline that extends to its recharge facilities. The district has acquired a 70-acre parcel lying northeast of the intersection



of Bar 10 and Henderson Roads in eastern El Paso County. This location represents what was determined to be the optimum recharge location for constructing aquifer recharge facilities in the lower part of the basin. Ten recharge basins were constructed at that site. Each basin is equipped with automated valving to allow for alternate dosing of the basins to optimize recharge and facility performance. The district has completed the construction of the 24-inch interceptor extending from the lift station site located south of SAFB extending to the new wastewater treatment plant site. The 20-inch nonpotable line was constructed from the WWTP site to the recharge site. The recharge basins were constructed at the recharge site.

This schedule works in harmony with the district's compliance schedule contained in their current WRF's discharge permit which calls for the ultimate decommissioning of the existing facility and the construction of the new replacement facility. In 2005, the district submitted a replacement plan to the State Engineer's office for review. The subsequent questions generated by the State Engineer's office were addressed by the district with the resubmission of additional documentation on the replacement plan in March 2008. The overall approach being pursued by the district is to utilize their transbasin water, which is available for use to extinction in such a manner that they can perpetuate the underlying base water supply to their constituents.

The District is in the planning phase for construction of additional treatment processes at the WRF to address the District's inability to reduce the level of Total Dissolved Solids (TDS) into the effluent stream. The District is operating under a compliance order on consent (#MC-140514-1) to address these issues. A revision to the District's site application for the WRF is expected to be sent to the WQCD in February 2019.

#### **21.19.2. Sunset's Ellicott Springs (formerly known as Sunset WWTP)**

Over the coming 20 years, the expansion and schedule will be timed in accordance with discharge permit requirements and growth. By 2010, when the Sunset's Ellicott Springs facility comes up for discharge permit renewal, Ellicott Springs plans to construct the facilities necessary to land-apply the treated and disinfected effluent at the agronomic rate to agricultural lands, which will satisfy the ammonia standard. Currently Sunset's Ellicott Springs does not discharge as it is operating at approximately 15% of capacity. It is expected that Ellicott Town Center and Ellicott Springs Development subdivisions will gain market traction in the coming five years and will need to discharge rather than land apply. An engineering study, design work, and financing plan are currently in the works for that facility upgrade and modification.

The 15" sewer outfall line that currently serves the Ellicott School District and will eventually serve Ellicott Town Center (Viewpoint Village and Springs East Village) will be extended and become a backbone collection line for the middle part of the basin. This collection line could serve many of the proposed subdivisions in the basin's midsection.

The facility anticipates running collection lines north and northeast to collect from other developments in the basin to the north.

This facility is operating under a compliance schedule contained within its discharge permit, which requires a demonstrated plan to meet forthcoming effluent ammonia and metal limitations within the permit. Planning and ultimate implementation is to be demonstrated whereby a revised or new facility can be shown to meet the forthcoming ammonia and metal effluent limits. Depending on the proposed improvements chosen, this could cost \$1,636,000. The nature of the compliance schedule requirements suggests the facility will need to be replaced with a mechanical facility if it is to be maintained at that location.

Although Sunset's Ellicott Springs has received site application approval for 0.5 mgd, construction of the facility was temporarily delayed due to economic slowdown. The wastewater treatment facility must be constructed under CDPHE Regulation No. 84. This approach eliminated the need to obtain preliminary effluents as all discharges from the facility are to be applied in the form of irrigation water at agronomic rates. The actual wastewater treatment plant is to be constructed as a second phase. It will require the installation of a large detention facility to hold discharged water over the winter period for use as irrigation during the summer/irrigation months. Based upon the nature of the permit secured for the facility, it is not allowed to have either a surface water discharge or to permit any of its irrigation water to percolate into the underlying soil. It is the intent to convey all solids to Sunset's Ellicott Springs WWTP.

### **21.19.3. Falcon Highlands Metropolitan District (FHMD)**

The FHMD is allocated adequate taps to fully build out their service area. Their number of 752 equivalent taps will probably take five to 10 years to fully build out. Woodmen Hills Metro District (WHMD) currently provides for the sewer service to the FHMD. WHMD operates the wastewater system in Falcon Highland and provides for treatment services.

### **21.19.4. High Plains Ranch (Case property)**

The metro district would provide water via the Sage Water Users Association, and wastewater

service has not been resolved. A sketch plan for the property was subsequently approved in 2008.

#### **21.19.5. Meridian Service Metropolitan District (MSMD)**

Service to MSMD is currently provided by Cherokee Metropolitan District through an IGA MSMD has with Cherokee. MSMD also has 0.100 mgd capacity in the WHMDRWRF plant.

#### **21.19.6. Paint Brush Hills Metropolitan District (PBHMD)**

PBHMD provides water and wastewater, among other services, to a residential/commercial service area of approximately 1100 acres near Falcon, including the recent inclusion of the 160-acre State Land Board parcel (Red Sky Ranch). The district currently serves approximately 700 SFEs in the neighborhood of Falcon Hills plus Falcon Middle School and Grace Community Church. PBHMD's current population is approximately 3,000, including middle school attendance. Current build-out estimates for PBHMD's future residential, commercial, and school services range from 1,750 to 3,500 SFEs.

PBHMD operates its own wastewater collection system, with one lift station serving most of the service area. Wastewater treatment is provided at the Woodmen Hills Metropolitan District Regional Water Reclamation Facility. The RWRF is owned by WHMD and is located on land within the boundaries of Meridian Service Metropolitan District (MSMD).

#### **21.19.7. Rock Springs Ranch**

A PUD development plan for rural residential development was approved. A metro district was formed (Rock Springs Ranch Metropolitan District) to provide central water service. Onsite wastewater systems are proposed for the approved residential area. A preliminary plan and final plat for the first residential filing are under review, along with approvals of location for the central water tank and water treatment facility. The developer envisions urban, mixed-use development in the area in the future, at which time sewer service issues will need to be addressed.

#### **21.19.8. Sterling Ranch**

Initial development of Sterling Ranch and related developments has begun, utilizing a wastewater service arrangement with Woodmen Hills. A lift station and force main was approved.

### **21.19.9. Woodmen Hills Metropolitan District (WHMD)**

WHMD is the largest and most developed service district in the Falcon area and has created contractual arrangements and relationships with several other newer and/or smaller districts and service areas within the Falcon area to provide a more regional basis of sewer service. They are studying options as to how and where to expand and/or develop wastewater treatment capacity. The current site is where the new RWRF is located but is in a highly developed area and requires a great deal of pumping for most sewer service.

#### Five-Year Plan

WHMDRWRF, online in January 2019, is designed to accommodate expansion through the installation of integrated fixed-film activated sludge (IFAS) media. The current rating is 1.3 mgd.

#### Twenty-Year Plan

The new facility is expected to require expansion to 3.0 mgd at a point roughly 10 to 15 years in the future. The new facility is master-planned for easy expansion expecting that ultimate area-wide capacity needs will be 3.0 mgd or greater. Growth in the service area is expected to increase between 2019 and 2022 then settling into a slower pace and slowing in roughly 2025.